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OF THE GEORGE EASTMAN HOUSE



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A short and unsuccessful career
by Beaumont Newhall

FROM WHAT STRANGE SOURCE

A contemporary account of how motion pictures were made in 1903

JOURNAL OF PHOTOGRAPHY AND MOTION PICTURES OF THE GEORGE EASTMAN HOUSE

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AMBROTYPE

A SHORT AND UNSUCCESSFUL CAREER

by Beaumont Newhall



IN THE SUMMER OF 1854, James A. Cutting of Boston, Massachusetts, received three United States patents:

- 11,213. Improvement in the Preparation of Collodion for Photographic Pictures.
- 11,266. Improvement in Composition for making Photographic Pictures.
- 11,267. Improvement in Photographic Pictures on Glass.

These all had to do with the making of glass positives, which a Philadelphian photographer, Marcus Aurelius Root, named "Ambrotype" or "the imperishable picture." The process was used to produce portraits which resembled daguerreotypes; like them they were made in standard sizes, were matted and framed in gilded brass and were enclosed in elaborate cases. Between the years 1854 and 1861 they practically replaced the daguerreotype until they, in turn, were displaced by the more economical tintype or the carte-de-visite paper print.

Although Cutting held basic patents for the making of these "daguerreotypes on glass," as



The Ambrotype process was used to produce portraits which resembled Daguerreotypes; like them they were made in standard sizes, were matted and framed in gilded brass, and were enclosed in elaborate cases. The example directly above shows in its background the iron headrest so necessary to the Daguerreotype process, the increased speed of the collodion emulsion allowed a more informal posing.

they were frequently called, he was not the inventor of the process, and – in retrospect – had no right to the patents, which were bitterly contested by American professional photographers. His pictures were nothing but collodion negatives, mounted against a black background. The process had been in use in England and France for years.

A collodion negative, viewed by reflected light, is somewhat grayish in tone, and it is for this reason that it is possible to view it as a positive. A photographic negative records the tones of the subject in reverse. Where there is no light, or little light, as in the shadows, the negative is clear glass. Where there is brilliant light, as in the highlights, a silver deposit is built up in the negatives. By transmitted light, the silver deposit, which is opaque, appears black, because no light is transmitted. By reflected light, however, the silver deposit varies in tone according to the precise composition of the sensitive material. In the case of the collodion process, the silver deposit is an unpleasant, light-gray tone. Laid upon a piece of black velvet, the transparent areas of clear glass – the shadows – appear black, forming a contrast to the gray highlights. The result is a positive image of a decidedly limited range.

The fact that a negative can be viewed as a positive was noted as early as 1840 by Sir John F. W. Herschel who recorded an experiment in making a glass plate light sensitive by precipitating on it silver chloride. "Exposed . . . to the focus of a camera, with the glass towards the incident light, it became impressed with a remarkably well-defined negative picture, which was direct or reversed according as looked at from the front or the back. On pouring over this, cautiously by means of a pipette, a solution of hyposulphite of soda, the picture disappeared, but this was only while wet, for on washing in pure water and drying, it was restored, and assumed much the air of a Daguerreotype when laid on a black background, and still more so when smoked at the back, the silvered portions reflecting most light, so that its character had, in fact, changed from negative to positive."¹

Herschel's experiment was theoretical, and he did not work out a practical technique for the use of glass as a support for light sensitive material. The problem was not solved until 1848, when Niepce de Saint-Victor perfected the albumen process, in which silver salts were

produced in a medium of egg white. These plates were intended for negatives, and in his original paper, Niepce de Saint-Victor made no mention of the fact that they could be viewed as positives. This fact, however, was clearly described by William Henry Fox Talbot in describing a modification of the albumen process in 1851 which he called the "Amphitype" and defined as "an image on glass [which] appears alternately positive and negative, according to the direction of the light to which it is exposed."² There is no indication, however, that he made any practical use of this technique.

In 1851 Frederick Scott Archer invented the collodion process, which rapidly replaced all the other known photographic processes – the daguerreotype, the calotype and the albumen plate. It proved to be the solution of the problem of the search for a means to make negatives upon glass, and from about 1852 until about 1880, was the standard procedure used by photographers everywhere.

As described by Archer in *The Chemist* for March, 1851, the process was relatively simple. A glass plate was flowed with a mixture of collodion and a soluble halide (Archer specified potassium iodide). It was then plunged into a bath of silver nitrate. While wet, the plate was exposed in the camera. Immediately afterwards the plate was developed, fixed and washed.

Curiously, Archer did not intend to invent a glass plate process. He was already working with albumen plates, and he didn't like working with glass. He objected to "the necessity of having a large stock of glass when a number of pictures are to be taken."³ He used glass only as a temporary support for the light-sensitive emulsion in his new process. After processing, the emulsion was stripped from the glass, rolled up around a tube, and the glass plate was then re-used. No matter how many exposures he made, he needed only a single sheet of glass. Archer was a pioneer in this stripping film technique, and he pointed the way to such later developments as George Eastman's "American Film" which was gelatin emulsion stripped from a paper base.

Other photographers, however, at once recognized that the glass plate could be left intact after processing. Prints from these negatives gave great detail, far better than those made from paper negatives, and just as good as from the much slower albumen glass negatives. By May, 1851, the London opticians Horne,



Only half of the collodion negative has been placed on a strip of black velvet. The photographic negative records the tones of the subject in reverse. Where there is no light, or little light, as in the shadows, the negative is clear glass. Where there is brilliant light, as in the highlights, a silver deposit is built up in the negative forming a light grey tone. The section placed upon the piece of black velvet is viewed as black through the transparent areas of the negative, forming a contrast to the dull grey highlights.

Thornthwaite & Wood announced that they had "arranged with Mr. Archer, the inventor of the Collodio-Iodide of Silver for the instantaneous production of Negative and Positive Pictures on Glass, for a continuous supply of the above, prepared by himself."⁴

The mention of "Positive Pictures on Glass" in this advertisement indicates that the ability to view a collodion plate either as negative or positive was already known to Archer although

he did not mention this property in his original publication of the process. This fact was noted by a photographer identified only by the initials "W. J." who wrote to J. H. Croucher, author of a standard photographic text published in 1851: "The practice of taking pictures in the camera by means of the solution of collodion on glass is so simple, so easy in execution, and so rapid in its results, that there is little doubt, not only that the use of paper will be abandoned, but





Ambrotypes of exterior views are rare. Above an informal group with horse and buggy; to the left a couple at Niagara Falls, Canadian side.

that Daguerreotypes will give place to positives taken by this means, which are less expensive, more correct (as by viewing the picture *through* the glass the proper position of objects is got), and *at least* as sensitive."⁵

In France collodion positives became so popular that in 1853, Leborgne, "Artiste Photographe" brought out a pamphlet⁶ on how to make them — which was sold by Alexis Gaudin, one of the oldest daguerreotype stockhouses in France. In addition to the simple technique of backing a glass negative with black material, Leborgne gave instructions in transferring the collodion emulsion to such materials as cloth, silk, wood, ivory, and even stone.

Surprisingly, Americans were slow to adopt the collodion process. Perhaps this was because they were not interested in making negatives: daguerreotypes were so popular that there seemed little need to seek another technique. The first use of the collodion process was to



Ambrotype

The comparative difference between the Ambrotype and the Daguerreotype may be seen, above and to the right. The relative tonal relationships are by far superior in the Daguerreotype.

Daguerreotype



produce paper prints, and these were scorned in the photographic press. "The fact that all these pictures taken on paper, require so much retouching by the hand of the painter will never recommend them to those who value the faithfulness of a daguerreotype," H. H. Snelling wrote in the *Photographic Art Journal* in 1852.⁷ The profession apparently did not realize that Archer's process could yield direct positives as well as negatives.

When Cutting began to advertise his patent, Americans suddenly found a rival to the daguerreotype, which was cheaper and easier to make. Most of the customers could not tell the difference between an ambrotype and a daguerreotype, particularly when it was framed and put into the identical type of case. Cutting had no trouble selling license rights. Even though it was possible for anyone to make ambrotypes without infringing the patents, which referred only to the cementing of a cover glass to the plate and to the composition of the sensitive collodion, still it was commercially advantageous to be able to stamp upon the gilded mat the words "Cutting Patent," and to advertise the fact. Thus R. H. Vance could advertise in the *San Francisco Herald* for Oct. 18, 1856:

"We have purchased the patent right of CUTTING AMBROTYPES for this State, and are now prepared to take them in a style unequalled in the United States, of any size from the smallest miniature to life size.

"I hereby denounce all Pictures taken on Glass in this city or State, and called Ambrotypes, as BOGUS, and a fraud upon the public, being a miserable imitation of the genuine article. I would say to all who have been deceived and swindled with Bogus Pictures, not to condemn this new and beautiful invention until they have seen the GENUINE AMBROTYPES."

His rival, J. M. Ford countered on the same page with

"DON'T BE HUMBUGGED!! Into Paying Your Money For worthless trash called Patent Ambrotypes, which are being palmed off upon the public as imperishable. THEY WON'T STAND SIX MONTHS.

"In the so-called Patent Ambrotypes the pictures are sealed with Balsam, which constantly oozes out, and soon leaves the pictures covered with blisters . . . By the improved method of putting up Ambrotypes, the cement is entirely done away with, and the picture is covered with an enamel which instantly dries and becomes as hard as the glass itself. This is the improvement, and the pictures are called IMPROVED AMBROTYPES throughout the United States and honest operators make no others."

Cutting's patent was bitterly, but not successfully, contested. When it came up for renewal, the Patent Commissioner denied the request, on the basis that Cutting had made claims of priority that could not be substantiated.

There were those who regretted the displacement of the daguerreotype. "I was glad to see . . . that there is a chance once more of the star of Daguerre shining forth again," wrote J. H. Fitzgibbon of St. Louis to the editor of the *American Journal of Photography* in 1861, "I fought hard once for it till it got entirely obscured by a black cloud called ambrotype, which laid me in the shade as well as the Daguerreotype; but the black, nasty, filthy, ghastly, dead, inanimate, flat, shade of shadows, are beginning to burst, break, peel, turn, change all colors (but the natural one) and must in time die out without any other exertion than their own selves."⁸

Die they did. In 1862 Humphrey's *Journal* noted: "The ambrotype is indeed in little demand now, and we trust soon to hear that the last one has been taken."⁹ In 1863, the *American Journal of Photography* predicted that "The name Ambrotype may soon become obsolete."¹⁰ By the end of the Civil War they were hardly made at all.

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WITH DOCUMENTARY TACTICS more than fifty years ago, **The Strenuous Life; or, Anti-Race Suicide** includes winter scene in New York City (December, 1904). This is an Edison Company film.

(Frame enlargement from original negative)



LOW-ANGLE SHOT obscures Edison actors in welter of building's exterior architecture. This is also **The Strenuous Life**.

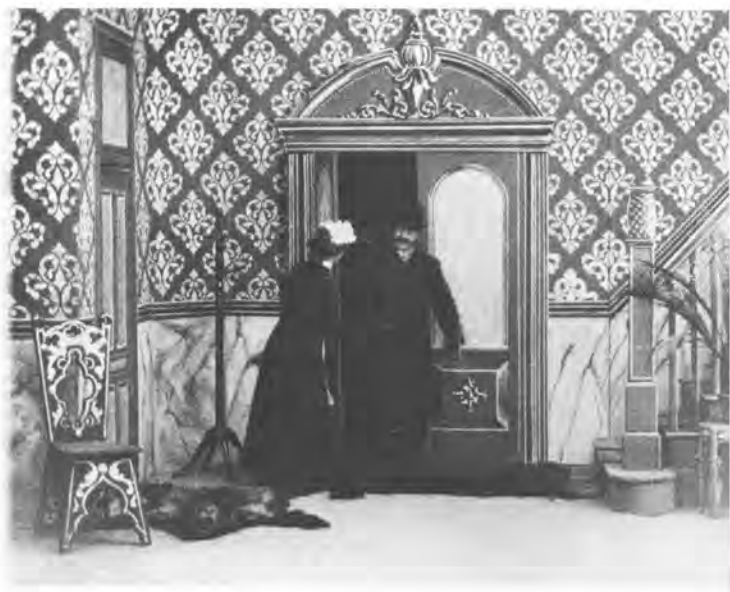
(Frame enlargement from original negative)

Contemporary accounts of how motion pictures were made in 1903 are scarce indeed. The following article illuminates the procedure. It appeared in The New York Daily Tribune of June 28, 1903, under the heading: "Posing for Pictures at Risk of One's Neck: Being Photographed for Moving Pictures is a Highly Strenuous Occupation." The Edison photographer mentioned must have been Edwin S. Porter who before the year's end was to direct and film The Great Train Robbery.

At least three of the incidents cited became classic. Four years later, when The Moving Picture World ran a series of articles entitled "How the Cinematographer Works and Some of His Difficulties," appearing intermittently from the issues of May 18 through Dec. 14, 1907, the unsigned author picked up the stories about The Miller and the Chimney Sweep and the express train, and used a variant of the story about the staged rescue on the beach at Atlantic City.

WITH THIS GARISH REPLICA of an entrance hall, Edison Company matches tasteless sprawl of real exterior shown below left, as **The Strenuous Life** continues. This setting at right was assembled in studio.

(Frame enlargement from original negative)



From What Strange Source

Did Motion Picture Actors Come,
a Newspaper Reporter Wondered in 1903.
This One Proceeded to Find Out.

THE TIME HAS COME in the vaudeville performance for the moving pictures. The sketch, "Is Marriage a Failure," has had its inevitable "reconciliation" and kiss and makeup conclusion. The comedy acrobats have tumbled themselves off the stage. Dorothy and Dolly, the "Two Queens of Music," have sung and smiled and kicked and danced away into the wings. The magician with a name from Hindostan and a dress suit from Sixth-ave. has hatched out chickens from the depths of his coattail pockets, and then disappeared himself. The house is dark.

And now on the white curtain a small boy springs into life. Although he leads only a photographed existence, the lad shows that he is very much akin to the flesh and blood variety. The picture is called *Spilled Milk*. A glance at the grimaces and antics of the boy would seem to show there could be no other kind of milk when he was around.

The imp runs up to a front door and pounds savagely with an old fashioned brass knocker.



(Frame enlargement from original negative)



CITY PARKS were handy settings for film producers in the early years of the century. This is **Weary Willie Kidnaps a Child**, filmed by the Edison Company in the summer of 1904. Hefty actor who played Willie was also the company's scene painter.

(Detail of frame enlargement from original negative)



EDISON'S **Raffles, The Dog** (Summer, 1905), made liberal use of city streets and their occupants. Here Raffles, taught by master and mistress to steal, carries off package from carriage. Below, engrossed in crap game, grocer boy fails to notice Raffles escaping with sausages from his basket.

A weazen faced woman opens the door, but the imp is gone. As the housewife withdraws her head a milkman appears. He sets down a huge pail of milk on the steps and pounds innocently with the knocker. The front door opens with such suddenness that a small girl in the front row shrieks. It is now the husband who springs into view with hair on end, a face contracted with rage and sleeves rolled up for a fight. He lands such a blow on the milkman's neck that the poor wretch doubles up under the concussion. The two grapple, only to fall headlong over the milk can and go sprawling into the white torrent. The two are still floundering on the inundated sidewalk as the picture finally vanishes.

Then come scenes of comedy and tragedy. Long narrow coils of film are unwound from the bobbins of the kinetoscope, and their thousands of little pictures are flashed on the screen so rapidly that all blend into a single pantomime.

But while the spectator laughs at the ludicrous adventures of these actors and actresses of the limelight, he inwardly wonders from what strange source they come. Who are these performers in real life? he asks himself. How can they survive such blows and kicks and burns and scalds? Are they a sort of salamander for whom neither flood nor fire has any terrors?

Should one seek to gratify his curiosity, let him go behind the scenes of the moving picture. For the kinetoscopic world is double, the same as is the theatrical. It has its stage machinery, its wings, its properties, its lights, its makeups, its exits and its entrances. To visit this other world one should make the acquaintance of some "picture actor," as one who poses for the kinetoscope is called, and go with him some bright morning to his work. As he leads the way he says:

"And so you wonder why I am not killed in this business. Yes, I do get a lot of hard knocks; but they can't do me up. I've been a tumbler

ever since I was twelve years old. It was then the circus came to town and I began practising in my father's barn. I have kept turning hand-springs and taking falls ever since. I used to act in vaudeville; but I like this business better."

Turning east from Broadway into Twenty-first-st., the "picture actor" hurries his steps till he comes to a new loft building, which is flanked on either side with monotonous rows of old brownstone dwelling houses.

"Top floor," he says to the elevator man, and a moment later he steps into what is half a photograph studio and half a theatre. It is the kine-tograph gallery of the Edison Manufacturing Company. The walls are covered with such histrionic properties as hats, boots, slippers, crowns, swords, guns, brooms, uniforms, armor, sunbonnets, mattresses and bathing suits. A bull terrier slumbers in one corner. He is still another property.

There is a group of performers waiting for the photographer to decide when the light is bright enough. Many play at Broadway houses at night, and thus one may recognize here actors and actresses whom perchance he saw upon the stage only the night before. The amateur is persona non grata here. Everything is so magnified by the lens of the kinoscope that faults in facial expression or bodily movements show more plainly in moving pictures than in the flesh and blood performance on the stage.

The sun goes under a cloud, and the fat scene painter, who also takes the part of Weary Willie, remarks:

"Say, I hope I don't get such a ducking today as I did in Prospect Park yesterday in posing for that sketch, *The Tramp and the Nursing Bottle*."

"But you didn't ruin a good suit of clothes," interrupted a clean shaven youth with a prominent nose, who always takes the part of the dude.

Weary Willie held his sides to suppress a laughing fit.

"That was one time I didn't get the worst of it," he said. "You see, we got a nurse girl in the park to stand for her part in the picture. Brooklyn nurse girls always like to have their pictures taken. They have so many babies to take care of, I suppose, it's a sort of diversion for them. The dude got a boat and was paddling in a pond near by. It was his part to save me when the time came. Well, I sneaked up to the baby carriage and swiped the bottle. I was just going

to satisfy that insatiable thirst of mine when the nurse grabbed me and threw me into the pond. I had thought it was water. It wasn't. It was Brooklyn mud — soft, slimy mud."

Here the tramp impersonator blew his nose as if to clear his brain of the obnoxious memory.

"The dude came up in his boat to save me. He was all dressed up. 'I'll soak him,' said I to myself, 'for bringing me to such a hole. It'll make the picture more realistic, too.' I grabbed the boat and sent him over the gunwale like a frog."

"But, look here," exclaimed the smooth cheeked youth, "why didn't you tell me you were going to duck a fellow? I didn't mind the mud so much; but I completely ruined my new silk stockings and imported tweed suit."

A wiry, thin faced man who boasts of being the original [Happy] Hooligan set up a loud laugh.

"That was almost as bad as the Prospect Park gardener and the hose stunt," he shouted at the end of the outburst.

"And I got the worst of it then, too," responded the genteel youth, as his face relaxed into a smile. The experience was further in his past, so that now he saw only its humorous side.

"You see, I was the gardener," he said, "and Hooligan here came along and doubled up the hose. When the water stopped, I looked down into the nozzle, and Hooligan straightened out the pipe and let me have it right in the face. The water almost carried away the levee of my nose and made an East St. Louis of my eyes and mouth; but I didn't fare so badly as Hooligan after all."

"And what happened to Hooligan?" chirruped a girl in a picture hat and high heeled shoes.

"I got a worse shake-down than the cops used to under 'Big Bill' Devery," was Hooligan's answer. "You see, we had made up in a hotel just outside the park. My clothes looked as if they had been built to order at Barren Island. They would have driven a ragpicker into politics. My partner, the gardener, was dripping from head to foot. Well, when we walked down a promenade bound for the hotel, one of the park police made a dash for us. But he wasn't in our class. He stood as good a chance as a dachshund chasing a coyote."

"We ran into the hotel at full speed, and as we dived into the elevator I ejaculated:

"'Top floor, sir.'"

"I guess the elevator man took my neck for the rope, for he gave me a terrific jerk, which landed me in the middle of the corridor.

"Throw this bum out," he yelled.

"The porters came running from all directions, as if I had the ball in a football game. I shouted to the clerk for help, but they'd changed clerks while we were out. The porters threw me into the street and the boys chased me around the block until my partner finally pulled the other clerk out of bed and identified us."

The sun came out of a cloud and the photographer announced a rehearsal for a sketch to be called *The Dude and the Bootblacks*.

Hooligan and Weary Willie soon masqueraded as shoe shiners, and the smooth chinned dude plastered his hair down, with the words:

"Now, I am going to get it again."

The rehearsal began with the dude coming down Broadway. The bootblacks rush at him, each fighting with the other for the coveted nickel. The dude tries to separate the hoodlums, when they turn on him and tumble him in a heap. They maul and thrash him until the little audience of actors roar with laughter.

"That's lively enough," says the photographer, as he fastens the unexposed film in place. Then he shouted to Hooligan:

"The dude must stand for anything in order to have a lifelike picture. When I whistle, I want you to grab him and black his face."

"One, two, three, go!"

There was no danger that the bootblacks were not going to furnish a vivid picture. When they jumped on the dude their victim went down with a thud which shook the properties on the walls. They tore his clothes, smashed his silk hat, ripped off his collar and at the signal Hooligan threw him down on his back and smeared the smooth face with blacking.

"That's right," came a smothered voice from between the black bristles of the dauber. "Make a good job of it. Make it real. I'll get a raise in salary for this. Make it real."

There was another pause before the next picture. The sun went behind another cloud. Meanwhile, the girl with a picture hat dressed for a bathing scene and the lifesaver rehearsed his heroic plunge into a stationary washtub. After the dude had washed off his blacking and had received the congratulations of all present, he told a story of how an amateur gave up the profession of a picture actor in the middle of his first performance.

"It was the picture known as *The Miller and the Chimney Sweep*," he said. "He was the miller and I was the sweep. He had a sack of flour over his shoulder and was trying to flirt with a girl when I happened along. You know, I don't believe in flirting. It's demoralizing. I only believe in flirting when I can do it myself. I had a bag of soot with me and so I let him have it right over the head. He was supposed to strike back with his flour sack and smother me. But he didn't. That one blow of mine laid him out. The soot bag burst and he forgot all about the girl he was flirting with. I was sort of frightened myself. I thought I had killed him. We hauled him away to a sink and finally brought him near enough to consciousness to hear him say:

"I don't think I want to be a picture actor."

"Isn't there enough in it?" I asked.

"There's too much," said he, as he shook a handful of soot out of his ear."

The fair bather appeared attired as if for a plunge in the surf at Atlantic City. She looked up at the skylight, but the sun was too bashful.

"Oh, May White," she said, as she sat down by a brook which Weary Willie had painted in his leisure hours, and which flowed into the corner where the dog was still sleeping, undrowned. "This picture makes me think of that interrupted bath we had in Jersey one time. Oh! You remember?"

May was a smaller woman, who was the leading lady of a road company, and at the word Jersey she replied laughingly:

"Yes, Vivian, how those farmers did bother us. I remember. The picture opened with our taking a quiet dip in the stream, when Weary Willie and Hooligan stuck their heads out of the bushes."

"And we did the job well, too," said Hooligan, who had just emerged from the dressing room, where he had shed the personality of bootblack.

"Yes, and though we threw water on you both, you were mean enough to steal our clothes."

"We only wanted to make the picture real," remarked Weary Willie, who had also cast off the bootblack guise and appeared in one of his 'raglans,' as he called it.

"It was so real," continued the bather, "that the farmers came running over the meadows from every direction. I thought they'd kill the hoboes, as sure as my name is Vivian Vaughan."

Well, we did succeed in ending the picture all right by putting our heads into barrels and walking to the nearest farmhouse. I guess there were fifty farmers at our heels."

"Because it was all so real," said May.

The sun still hung behind the cloud and the dude gave the conversation a new shift by saying:

"That bathing suit makes me think of the beautiful girl whose life I saved at Atlantic City. It was a drowning scene. An actress consented to drown on the condition that I should rescue her. That's the confidence girls all have in me. Well, she went down, once, twice and a third time. I dived almost to the bottom before I caught her. The whole beach was panic stricken. I could see women and men running up and down the sand as I swam in with my treasure. I drew her out on the sand and to make it life-like I whispered:

"Now, put both arms around my neck."

"She hugged me just as a drowning person does. It was touchingly natural. Finally, the photographer yelled:

"Here, that's enough of that. I finished the picture half an hour ago."

There was a patter of rain on the skylight, and the bather breathed a little tired sigh as she wrapped herself in the robe of a fourteenth century empress.

The rain, however, aroused Hooligan.

"This obstinate weather," he said, "makes me think of that obstinate picture of the photographer and the train. We were to get permission from a Jersey railroad to let a locomotive run over one of us. We wrote the general manager, and thought everything was all right for a good fatal accident. We chose the fastest express to do the deed, and a few minutes before the train was scheduled to pass through Orange [New Jersey] the dude put a camera on the track and stuck his head under the cloth. A moment later the express hove in sight. It came thundering down the track at a furious rate, and when it was a quarter of a mile distant we substituted the dummy.

"Well, that engineer almost blew his whistle off, but we thought he had been ordered by the general manager to put lots of life into the picture. The next instant we saw him reverse the lever and set the air brakes. The ground shook as the locked wheels of the cars slid along the track, and the engine drivers spun around and shot off sparks like pinwheels. The locomotive



SAMPLES OF NEW YORK STUDIO WORK by Edison's competitor, American Mutoscope & Biograph Company. Top, **A Good Shot** (1899), in which Little Willie's sister holds his target. Center, **The Troublesome Fly** (1900).

(Frame enlargements from original negative)



Hot Mutton Pies (1901): the grisly climax in which the Oriental salesman (right) switches his sign to confess the actual contents of the boys' purchase.

(Frame enlargement from original negative)





THE BIOGRAPH COMPANY takes to the open air in New York City to film **Personal** (1904). Racing along Riverside Drive from Grant's Tomb, pursued by women, is the French nobleman who advertised in the paper for a wife.

(Frame enlargement from original negative)

almost came to a standstill as it knocked the dummy photographer and his camera into a ditch. The engineer, fireman, mail clerks, brakemen, porters, conductor and passengers leaped off that train and ran to the scene of the accident. One woman was sobbing outright as she stooped forward, picked up the dummy, and looked into the deathlike face. She was so beside herself that she stroked its lifeless forehead and muttered:

"Poor fellow. I wonder if he leaves any children?" She didn't let go until a negro porter came up and said:

"Pardon, marm, but dat's only a big rag dawl."

"When the engineer and conductor found out what really had happened they were ready to run the engine over the whole of us. They said they hadn't had the slightest warning. Of course, we were mighty sorry to give them such a nervous shock, and after things had been fixed up at headquarters we took the picture a month later with the same express and the same engineer."

"Taking a tumble with a horse is nice work," said Hooligan. "I've been run over by automobiles, road rollers and trolley cars to furnish a

good picture, but none of these pastimes are as diverting as falling with a horse. You've got to train the horse as well as yourself to tumble without being killed. It makes a great picture. In the theatre, when the steeplechase begins, you ought to see the people sit up in their seats. The horses rush toward them, leap over the barrier, and look as if they were going to jump into the orchestra. Then one of the horses catches his hoof in the top rail. You can hear every woman draw in her breath. The horse falls in a heap. There's half a hundred screams and 'Oh, my's.' The rider goes down right under the animal and both roll over. "That's awful!" screams an hysterical girl in a box. Then horse and rider jump up and gallop away as if nothing had happened. The girls all sigh and get out their smelling salts, and say they're so glad no one was killed."

"Why, yes," exclaimed Weary Willie, as he began painting a bed of violets. "I've sat in a front seat with my wife and seen myself so nearly murdered in a moving picture that it's brought tears to her eyes."

"Because you lived through it," interrupted the dude.

The sun was shining by that time.

John Smith

A pioneer of photography in Australia

by David S. Macmillan and Keast Burke

IN THE COURSE of the first intensive survey of the archives of the one hundred years old University of Sydney in New South Wales, a collection of over three hundred wet-plate negatives came to light in a cellar. During the previous year, two or three albumen prints had been discovered, and had been recognized as the work of Professor John Smith, the University of Sydney's first Professor of Chemistry, appointed in 1852. When the large deposit of negatives was found, it seemed clear that they too were the work of Smith, and the University Archivist immediately referred the find to the leading expert on early Australian photography in Sydney — Mr. Keast Burke of Kodak (Australasia) Pty. Ltd., Editor of the "Australasian Photo-Review." Close examination of the negatives proved conclusively that they were Smith's; several of the stereoscopic pairs were inscribed with Smith's initials and dates in the late 1850's. This discovery, together with the Jevons collection traced by Mr. Burke and the Fortescue Moresby collection recently identified by the same authority, make the existing record of Australian photography in the 1850's very complete.

The Smith Collection has a wide range of subjects, and includes a few early indoor photographs. Australia was in the making in the 1850's, with Gold Rushes and expansion in every field of activity, so the Smith Collection is a unique record of a most important period in the country's history. Smith was a Scot, son of a blacksmith in the Aberdeenshire village of Peterculter. He availed himself of the then remarkably democratic educational system of his country and won his way to the University of Aberdeen, where he graduated Master of Arts "with honourable distinction" in 1843 and Doctor of Medicine in the following year. This meant that he must have done an Arts and Medical course concurrently—a burden of work for a student at any time but in view of Smith's humble circumstances it was probably a very

hard struggle. He gained a position on the University staff in 1844 and for several years after his graduation lectured in Chemistry at Aberdeen, carrying the main burden of instruction in that subject since the Professor was in ill health. In 1851 Smith applied for the post of "Professor of Chemistry and Experimental Philosophy" in the newly-founded University of Sydney. He obtained the post and arrived in Australia in September, 1852. At the moment it is impossible to say whether Smith was acquainted or unacquainted with photography at the time of his arrival. D. O. Hill and others were active in the photographic field in Scotland in the 1840's and 1850's. Many photographers of the time were men of science, and in the possession of the Blacket family—a family closely associated with the University in its early days—some Smith prints have been found, together with a few daguerreotypes. It is impossible to say whether these are Smith's work or not.

Smith was one of the first scientists to arrive in Australia and his services were much in demand. Not only had he begun the serious study of chemistry in this country, gaining for himself the title of "the father of the teaching of Practical Chemistry in Australia," but he also did important work in connection with commissions on water supply where his talents as an analyst made him a valuable member. He entered into the controversies of the period, taking a firm rationalistic and progressive viewpoint, stating that "Chemistry is as conducive to the Glory of God as Dogmatic Theology." He fought for the introduction of women students to University classes and was a leader of the Insurance Movement, helping to found a company which is today one of Australia's largest in this field.

The wet-plate or collodion process had been invented by the sculptor Scott Archer in 1851 and as far as we know definitely all Smith's photographic work was done by means of this process. Amateurs were experimenting with

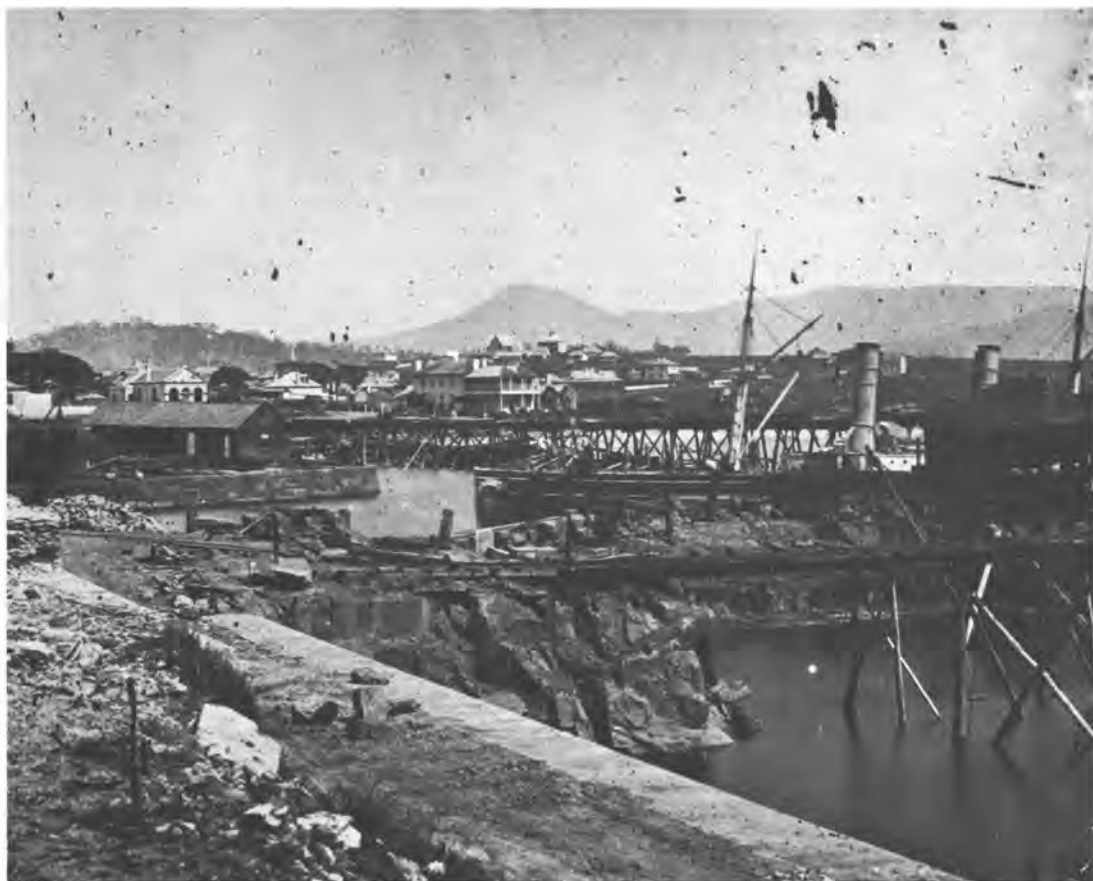
cameras all over the world and Smith had an eye for interesting subjects. From the point of view of the University of Sydney, the most interesting part of his collection consists of a number of views of the University under construction – this enables the photographs to be exactly dated since the various stages of construction shown can be checked against the University records and the dates arrived at. The construction of this large building – recently described as “the finest example of the Gothic style in the Southern Hemisphere” – was a natural subject for Smith. Photographs of groups of stonemasons at work, many of them with Smith shown timing the photograph, are a unique record of construction which it is doubtful if any other university founded and built in the 1850’s can match. The majority of the plates were made between 1856 and 1861. Apart from showing the building of the University, there are a few early views of Sydney Harbour, some views of the Gold Fields with groups of “diggers” and most interesting of all, there is a large number of family and domestic groups. Fortunately it

has been possible to identify a good number of the subjects exactly and the domestic scenes give a fascinating view of social life in Australia in the 1850’s. As one of the original members of the University staff, a member of the Board of Education and of the Legislative Council, and as Chairman of Government Commissions, Smith had a wide range of acquaintance among the ruling class in the Colony and the homes and families of this society figure prominently in the collection.

The century-old wet-plate negatives had received scant physical care during their ninety-eight years of survival and the majority were badly scratched; nevertheless having the two frames of the stereo pairs from which to select the best was decidedly helpful. Moreover the fact of having the actual negatives meant that direct enlarging was possible without the need for copying.

In at least two important respects, these photographs form a valuable complement to the Holtermann Collection. First of all the latter represented contemporary professional photog-

THE PORT OF KIAMA, New South Wales, under construction c.1858; an important stage in the development of the Illawarra or South Coast area of the colony.





THE REVEREND A. CAMERON, Presbyterian minister at Windsor, New South Wales, photographed with his wife on the verandah of their residence on High Street, Windsor, c.1857.

raphy; the new collection was a purely amateur one. Secondly, the Merlin photographs depicted the every-day lives of every-day people up country on the goldfields; the John Smith series showed the home life in Sydney of the leaders in politics, society and University circles.

The word 'contemporary' is used in the general sense. Actually the Smith collection is, on the average, some fifteen years earlier in date than the Holtermann. Those few years take us back to the forgotten almost-unimaginable era of stovepipe hats and crinoline dresses.

The subject matter of the Smith stereo negatives may be briefly summarized as follows:

Stages in the completion of Sydney University main block.

Family groups and homes of early professors, members of the Senate, the clergy, etc.

Scenes taken on geological expedition to Bondi, Kurrajong, Kiama, etc.

Scenes in Sydney Harbour (including one of the early stages in the Governor Denison fortification of Bradley's Head).

A church, rectory and private home (eventually to be located at Richmond, N.S.W.).

An excellent home-life series, photographed in the early sixties, (eventually identified as showing the household at "Drummoyne" — the Wright mansion in that suburb, the first house on the Point, set in some twenty-two acres of grounds).

Picnics for the family and visitors to the headwaters of Lane Cove and Middle Harbour.

A few Tasmanian views.

A fine coverage of about seven prints, of the families of Rev. Dr. Woolley and Archdeacon Reiby, photographed in a conservatory.

In addition to the above stereo pairs (of size about 3" x 6½"), there were a few negatives of larger format. These consisted of two half-plate



PROFESSOR JOHN SMITH, in tall hat, photographed during the construction of the University of Sydney, 1856-59.

stereo negatives (one of an attractive garden scene with a group) and three whole plates — one of Woolloomooloo Bay and two of the University main building under construction. These latter two differ in physical appearance and may well have been exposed on the new dry plates of Dr. Hill Norris which were tabled at the meeting of the Philosophic Society of New South Wales, held on December 8th, 1858.

The existence of these few half- and whole-plates may suggest that there was once a large amount of Professor Smith's photography in these formats.

Smith printed a volume of "Wayfaring Notes" in 1865, but it contains very little autobiographic detail and only one passing reference to photography — a reference to some photographs taken by an Army Officer in China at the storming of the Taku Forts. In a later volume of the same title recording a visit to the United States of America in which he visited the battle fields of the Civil War, Smith gave an account of American manners in considerable detail — but he made no mention of Mathew B. Brady and

his great photographic achievement in recording the War.

It is unfortunate that we know so little of Smith the man or Smith the photographer. His two published volumes give little lead to either aspect of this interesting personality. From the references of contemporaries it is apparent that he was a keen and energetic academic man of affairs. His frequent appearance in his own photographs gives some lead to his personality — the sombre frock-coat and stovepipe hat which he wore on all occasions, even in the Australian bush, imply a serious attitude towards life and a formalism that was indomitable. His position as the Scientific Professor in a University which was modelled on Oxford and Cambridge with their classical tradition, puts him at rather a disadvantage with regard to his colleagues, but his thirty-odd years of work in Australia made a sound basis of scientific achievement in this new country. The large surviving selection of his photographic work constitutes the most important addition so far to the Photographic Archives of Australia.

INDEX TO MOTION PICTURE COLLECTION

STELLA MARIS

1918. Produced in USA by Paramount Arcraft. Directed by Marshall Neilan. With Mary Pickford, Conway Tearle, Marcia Manon. 7 reels 16mm positive.

Just about at the peak of her popularity, in 1918 Mary Pickford produced a film that in a splendidly realized dual role, enabled her to point up all her most successful specialties in a single vehicle. As the wealthy invalid girl she was able to project fragile beauty, courage and a kind of ideal delicacy. In the role of the grotesquely homely orphanage slavey her performance ranged from the comic hoyden to poignant suffering and tragedy. Miss Pickford's seemingly effortless virtuosity is effectively supported by the grimly affecting gifts of Marcia Manon (Camille Ankewich) as the hero's alcoholic wife. The validity of Miss Manon's impressive acting and the solid merit of a film which enables the sweetness-and-light heroine to come face to face with the harshest kind of realities of life even as it is lived in the movies of forty years later, combine to make *Stella Maris* a great surprise to present day viewers who have forgotten (or never knew) that the Pickford career was built on contributions far more substantial than the golden curls, tear dimmed eyes and sunny smile that have fondly by some and rather contemptuously by others, been so long associated with her memory.

SHIFTING SANDS

1918. Produced in USA by Triangle. Directed by Albert Parker. With Gloria Swanson, Joe King, Harvey Clarke, Lillian Langdon. 5 reels 35mm positive.

For students of the development of Gloria Swanson from a Keystone comedienne to one of the half-dozen greatest stars of the American cinema, *Shifting Sands* is a milestone in her career of primary importance. Usually the Triangle period is casually skipped in accounts of the Swanson rise and Cecil B. De Mille is quick to accept all credit for her transition from Sennett to stardom. As an untalented New York artist, struggling to keep herself and



her dying sister alive, Gloria's heroine is railroaded to Blackwell's island by a lustful landlord. From jail she goes to the Salvation Army, then through a

Cinderella-wedding she becomes mistress of a handsome Long Island estate and happy mother as well. The villain re-enters to involve her husband in a counterfeiting plot and Gloria must courageously stake all to save her husband in the face of blackmail and threatened death. Historically, all this of course involves the gamut. And without the benefit of De Mille, Gloria Swanson delivers handsomely. In fact, her acting was never better as perhaps she herself recognized when, nine years later, faced with the challenge of her first independent production, she chose the director of *Shifting Sands* to direct *The Love of Sunya*.

SUNNYSIDE

1919. Produced in USA by First National. Directed by Charles Chaplin. With Charlie Chaplin, Edna Purviance, Tom Wilson. 3 reels 35mm positive.



Chaplin's rustic comedy, perhaps because it was not too well received by American critics when it was released, has been one of the most infrequently revived of the comedian's self-produced pictures. Retrospectively, a good deal has been written about the dream ballet that it contains and, it appears, most of that writing has been based on a fond look at publicity stills, one of which is published here. Describing the dance in *The Great God Pan*, Robert Payne wrote: "He plucks a daisy and arranges his hair to represent two black horns. Now at last he is truly and admittedly Pan . . . and so piping Pan-like on the daisy he joins their dance. He dances superbly . . . There is no burlesque." Even Ted Huff in his book, *Charlie Chaplin* wrote: "Charlie joins them, twisting his hair into a Pan coiffure and piping through a daisy. Charmingly he burlesques the classic Greek dance a la Ballet Russe, with Nijinskie leaps and grotesque poses."

But a look at the film rather than at the publicity stills reveals—alas for the Pan image—that throughout the entire sequence, Charlie never once removes his derby! Both writers go into some detail about the quality of Mr. Chaplin's dancing in this scene—obviously based again on their study of still photographs that have little or no resemblance to the action that Chaplin put before the motion picture camera. *Sunnyside* should provide another object lesson of the value of seeing a motion picture which one intends to analyze for the enlightenment of others.

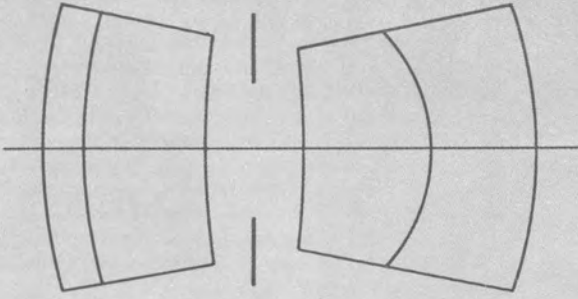


Fig. 1 Group Aplanat (1879)

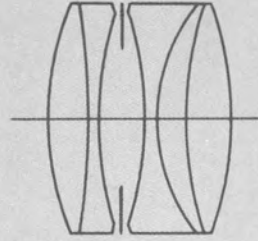


Fig. 4 Rapid Antiplanet (1893)

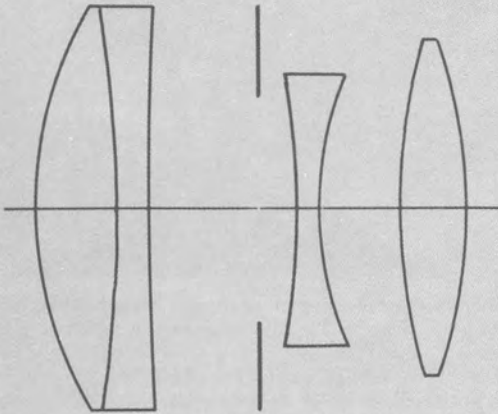


Fig. 2 Portrait Antiplanet (1881)

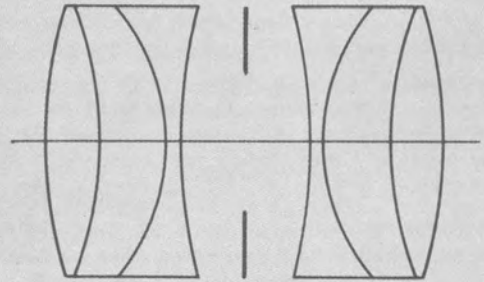


Fig. 5 Orthostigmat (1893)

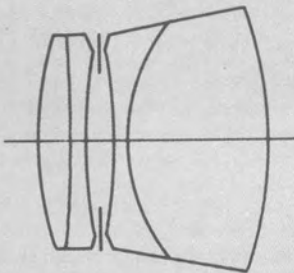


Fig. 3 Group Antiplanet (1881)

All drawn to the same focal length

THE STEINHEIL ANTIPLANET LENSES

by Rudolf Kingslake

DURING THE 25 YEARS following the introduction of the Aplanat, the Steinheils were actively engaged in attempts to improve it, although without much success. In 1879, Dr. H. A. Steinheil patented (DRP 6189) a lens called the Group Aplanat embodying very thick components, the cemented interfaces being of decidedly different radii in the two half-systems (Fig. 1). It was claimed that this lens would cover a field of $\pm 28^\circ$ at $f/6.2$, but computations show that its performance probably did not differ much from that of an Aplanat of more conventional design.

Two years later, Dr. Steinheil announced a new principle of lens design to which he gave the name "Antiplanet," from the Greek *anti* and *planetes*, meaning "oppositely wandering." This was in reference to the fact that the aberrations of the two components had opposite sign and thus tended to neutralize each other, whereas in a symmetrical lens such as the Aplanat the spherical aberration and astigmatism of the two identical halves are directly added together. Two designs were announced and described in DRP 16354 of 1881: the Series I "Portrait Antiplanet" covering a field of $\pm 15^\circ$ at $f/3.9$, and the Series II "Group Antiplanet" covering $\pm 30^\circ$ at $f/6.2$.

The Portrait Antiplanet (Fig. 2) somewhat resembled the Petzval Orthoskop lens. The front cemented doublet was decidedly undercorrected for the axial aberrations, while the rear component was overcorrected and had a negative power. The field was noticeably inward-curving, but the astigmatism residuals were very small.

The Group Antiplanet (Fig. 3) was of an entirely novel construction. In the front component, the convex element was made of a flint glass, and the concave element of crown glass. This had the effect of drastically undercorrecting the spherical and chromatic aberrations, these two aberrations being corrected by the strongly dispersive cemented surface in the thick rear component. The rear component had very little power (it was actually slightly negative) and served merely as an aberration corrector. The George Eastman House is fortunate in possessing a sample of this lens, in a 135mm

focal length. The chromatic aberration and coma residuals are rather large, and the lens performs little better than an Aplanat of the same relative aperture and focal length. It is highly probable that Steinheil could have done much better if barium crown glasses had been available to him.

In 1893, Dr. H. A. Steinheil's son Rudolf introduced another member of this series, called the Rapid Antiplanet (Fig. 4) (DRP 76662), the name being misleading because the aperture and field were actually the same as for the Group Antiplanet, namely, $f/6.3$ and $\pm 30^\circ$. This objective embodied a triple cemented rear component, the outside glasses being a medium flint with an intermediate element of crown glass. The front component was similar to that of the Group Antiplanet, in that the refractive index of the convex element was high while that of the concave element was low. However, by this time Abbe and Schott's barium crown glasses were available, and by the use of a dense barium crown combined with an extra light flint in the front component, Steinheil was able to keep the chromatic aberrations under better control.

In the same year, R. Steinheil found that he could obtain better results by making a fully symmetrical lens from two identical triple cemented components similar to the rear component of the Rapid Antiplanet. This lens, called the Orthostigmat, was manufactured for several years. It covered a field of $\pm 30^\circ$ at $f/6.3$ with very little astigmatism (Fig. 5) (DRP 88, 505).

The antiplanet principle thus failed to accomplish what was hoped for it, not because unsymmetrical lenses are inherently bad (most modern lenses are unsymmetrical) but because the introduction of heavy aberrations in each half was overdone. The aim today is to keep the aberrations of each half as small as possible, while making sure that they compensate each other satisfactorily. The lack of a glass of high refractive index and low dispersion, such as barium crown, must have represented a severe restriction to Steinheil, and actually a cross-section diagram of some modern anastigmats strongly resembles a similar diagram of the antiplanets.



THE DRYDEN THEATRE OF THE GEORGE EASTMAN HOUSE

GEORGE EASTMAN HOUSE ASSOCIATES CALENDAR

Exhibitions

August 15 - October 28

19th CENTURY ARCHITECTURAL PHOTOGRAPHS, from the Eastman House Collection

SAN FRANCISCO EARTHQUAKE and FIRE
by Arnold Genthe

November 10 - December 1

LOOK AT AMERICA, an exhibition created by
Look magazine

October 1 - November 30

COLOR CAMERA, photographs by Donald
Egbert

September 12 - November 9

PORTFOLIO, a selection of photographs from
the work of Paul Caponigro

Associates Travelogues—Dryden Theatre

October 13, at 8:30 P.M.

FABULOUS FLORIDA, by E. P. Wightman

November 10, at 8:30 P.M.

BRUSSELS WORLD FAIR, by Frank Ritter

Associates Film Program—Dryden Theatre

October 27, at 8:30 P.M.

OUR TOWN, with William Holden, Frank
Craven